

# Notice of Allowability

Application No.

09/976,187

Examiner

Kandasamy Thangavelu

Applicant(s)

SIMMONS ET AL.

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## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to October 4, 2006.
2. ☒ The allowed claim(s) is/are 55,56 and 58-82.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

## **DETAILED ACTION**

### ***Introduction***

1. This communication is in response to the Applicants' communication dated October 4, 2006. Claims 55, 75, and 82 were amended. Claims 55, 56 and 58-82 of the application are pending.

### ***Reasons for Allowance***

2. Claims 55, 56 and 58-82 of the application are allowed over prior art of record.
3. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

The closest prior art of record shows:

(1) a method of optimized design of HVAC air-handling assembly for a climate control system of a vehicle; analyzing the performance of the HVAC air handling assembly using engineering analytical technique; the method uses parametric design with predetermined design, manufacturing and engineering criteria; the method uses simulation based design evaluation to evaluate the performance and structural integrity of the design; the method uses a library providing expert's knowledge of the design; the library includes component parts library

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containing solid models of components as well as parameters defining the characteristics of the components; the design tools include solid modeling and parametric design techniques; the engineering analysis tools include computational fluid dynamics (CFD) and finite element analysis (FEA); the interactive design provides for display and animation of the designed system; the drawing of the designed system can be displayed on the screen (**Hall et al.**, U. S. Patent 6,651,037);

(2) a method of effecting commerce in a networked computer environment in a computerized system; a database of vendor product data and associated database interface is established in a first computer; the interface allows remote interface by one or more users; a local user interfaces with the database by querying the database with a local user's product/service specification; the database provides the local user with a selection of remote vendor network sites, the selection determined by the user's query; the local user then connects to the remote vendor network sites and the user selects products/services from the information provided on the remote vendor network site; the selection of particular product/service triggers a transaction notification which records a user's selection and associated financial data; then the user is asked to confirm the selection; the interface then transmits the purchasing/ordering data to the remote vendor site (**Harrington**, U. S. Patent 5,895,454);

(3) simulation tools to determine the energy performance of the buildings to aid analysis and design of energy-efficient buildings; the simulation combines a description of the building and the HVAC systems with weather and occupancy related data to calculate energy

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requirements of the building; the simulations compute heating and cooling loads without explicit considerations of how these loads are met; a program predicts the heating and cooling loads under different conditions and then converts these loads into electrical and gas energy requirements; the performance predicted by the simulator under measured driving functions is compared with the measured performance; corrective heat flows are then calculated from calibration parameters (Subbarao, U. S. Patent 6,134,511); and

(4) an interoperable design tool for HVAC design, integrating individual tools; the tool links together an architectural CAD system, a 3-D space model, a CFD program and a building energy simulation program and utilizes real product data from manufacturers' software; by modeling geometry, spatial relationships and objects like walls and windows using the 3-D space modeler, the information can be used in other design tools such as energy simulation and CFD; the space modeler has features that enable direct transfer of digital building geometry and construction data between architectural software; the model defines the thermal loads in energy simulation and CFD analysis and flow obstacles in CFD analysis; the energy simulation tool is used for energy analysis and HVAC equipment sizing; energy simulation programs calculate an average temperature in space; information about temperature distribution, air movement and concentration distribution can be calculated by a CFD program; the distribution of air velocity and temperature can be displayed on a schematic diagram of the space (Laine et al., "Better IAQ through integrating design tools for the HVAC industry", Proceedings of the Healthy building, 2000, Vol. 4).

None of these references taken either alone or in combination with the prior art of record discloses a computer-readable medium storing a computer program for designing an HVAC system, specifically including:

(Claim 55) “the multiple schematic representations reflecting distinct operational contexts of the selected design element, the distinct operational contexts comprising a first operational context representing transport of mass, and a second operational context representing the transport of energy, wherein each schematic representation is made using a separate distinct palette of icons of components suited for that operational context”.

None of these references taken either alone or in combination with the prior art of record discloses a method for designing an HVAC system, specifically including:

(Claim 75) “the multiple schematic representations reflecting distinct operational contexts of the selected design elements, the distinct operational contexts comprising a first operational context representing transport of mass, and a second operational context representing the transport of energy, wherein each schematic representation is made using a separate distinct palette of icons of components suited for that operational context”.

None of these references taken either alone or in combination with the prior art of record discloses a computer-readable medium storing a computer program for designing an HVAC system, specifically including:

(Claim 82) “the multiple schematic representations reflecting distinct operational contexts of the selected design element, the distinct operational contexts comprising a first

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operational context representing transport of mass, and a second operational context representing the transport of energy, wherein each schematic representation is made using a separate distinct palette of icons of components suited for that operational context”.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance.”

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Rodriguez, can be reached on 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

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published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K. Thangavelu  
Art Unit 2123  
November 27, 2006

  
PAUL RODRIGUEZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100  
12/6/06